

AMENDMENT TO THE CLAIMS

1. (currently amended) A method of processing data stored in a structured data source, comprising:

receiving a natural language input;

analyzing the natural language input to identify semantic information contained therein;

associating portions of the natural language input with a command object and an entity

object of a schema based on the semantic information and the natural language

input, wherein the entity object relates to data in the data source; and

rendering data from the data source in a table of columns and rows based on the schema

and the associated portions of the natural language input.

2. (previously presented) The method of claim 1 and further comprising accessing the data source to identify words and phrases associated with dimensions in the data source.

3. (original) The method of claim 2 wherein accessing further comprises identifying words and phrases associated with levels and values in the data source.

4. (original) The method of claim 1 wherein associating further comprises associating portions of the natural language input with a frame object of the schema, wherein the frame object corresponds to how to render data.

5. (original) The method of claim 1 wherein the command object relates to a task to be performed for rendering data.

6. (canceled)

7. (original) The method of claim 1 and further comprising:
changing the table based on a further command received.
8. (original) The method of claim 7 wherein the further command is highlighting a portion of the table.
9. (original) The method of claim 7 wherein the further command is sorting a portion of the table.
10. (original) The method of claim 7 wherein the further command is filtering information in the table.
11. (original) The method of claim 7 wherein the further command is adding information to the table.
12. (original) The method of claim 7 wherein the further command is clearing information in the table.
13. (original) The method of claim 7 wherein the further command includes switching the row and column information.
14. (original) The method of claim 1 and further comprising:
presenting candidate interpretations based on the natural language input.
15. (original) The method of claim 1 and further comprising:
providing an interactive interface to a user for entering the natural language input.

16. (original) The method of claim 15 and further comprising:
performing at least one of indicating recognized terms in the natural language input and
providing candidate interpretations while a user enters the natural language input.
17. (original) The method of claim 1 and further comprising:
rendering a natural language description of information in the table.
- 18.(original) The method of claim 1 and further comprising:
maintaining a history of previous tables rendered for future use.
19. (original) The method of claim 1 and further comprising associating portions of the natural
language input with words and phrases associated with the data source.
20. (original) The method of claim 1 wherein analyzing further comprises identifying ambiguous
terms in the natural language input and presenting candidate alternatives for the ambiguous
terms.
- 21-31 (canceled)
32. (currently amended) A method of processing information to drive an application, comprising:
providing an interactive interface to a user for entering a natural language input;
receiving ~~a~~the natural language input;
analyzing the natural language input to identify semantic information contained therein;
accessing a schema to identify a command object and an entity object based on the
semantic information and the natural language input; and
performing an action associated with the application based on the command object and
the entity object.

33. (original) The method of claim 32 wherein the application is a spreadsheet application.

34. (original) The method of claim 32 wherein the action includes rendering data from a data source in a table of column and rows based on the schema.

35. (original) The method of claim 34 wherein the action includes rendering a single cell of information from a data source based on the natural language input.

36. (original) The method of claim 32 wherein the command object is associated with a command performed in the application and the entity object is associated with data used by the application when performing the command.

37. (original) The method of claim 36 wherein accessing a schema further comprises identifying a frame object, wherein the frame object associates the entity object with the command object.

38. (original) The method of claim 32 and further comprising presenting candidate interpretations of the natural language input based on the schema and the semantic information.

39. (original) The method of claim 32 wherein accessing the schema includes identifying multiple entity objects.

40. (original) The method of claim 32 wherein accessing the schema includes identifying multiple command objects.

41. (previously presented) A method of displaying information from a data source, comprising:
- receiving a first natural language input from a user;
 - analyzing the first natural language input to identify semantic information contained therein;
 - associating portions of the first natural language input with a command object, a frame object and an entity object of a schema based on the semantic information and the first natural language input;
 - displaying a table of columns and rows to the user as a function of the command object, the frame object and the entity object;
 - receiving a second natural language input from the user referring to the table of columns and rows;
 - altering the schema based on the second natural language input; and
 - modifying the table as a function of the altered schema and displaying the modified table to the user.
42. (previously presented) The method of claim 41 wherein the frame object corresponds to how to render data.
43. (previously presented) The method of claim 41 wherein the command object relates to a task to be performed for rendering data.
44. (previously presented) The method of claim 41 wherein the entity object relates to data in the data source.
45. (previously presented) The method of claim 41 wherein the second natural language input relates to highlighting a portion of the table.

46. (previously presented) The method of claim 41 wherein the second natural language input relates to sorting at least a portion of the table.

47. (previously presented) The method of claim 41 wherein the second natural language input relates to filtering information in the table.

48. (previously presented) The method of claim 41 wherein the second natural language input relates to adding information to the table.

49. (previously presented) The method of claim 41 wherein the second natural language input relates to clearing information in the table.

50. (previously presented) The method of claim 41 wherein the second natural language input relates to switching the row and column information.

51. (previously presented) The method of claim 41 and further comprising associating portions of the natural language input with words and phrases associated with the data source.